



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10**

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OFFICE OF
ENVIRONMENTAL CLEANUP

JUL - 5 2011

SUBJECT: Action Memorandum for the Avery Landing Site located near Avery, Shoshone County, Idaho

FROM: Earl Liverman, Federal On-Scene Coordinator
Emergency Response Unit

THRU: Chris D. Field, Manager
Emergency Management Program

TO: Daniel D. Opalski, Director
Office of Environmental Cleanup

I. PURPOSE

The purpose of this Action Memorandum is to request and document approval of a non-time critical removal action for the Avery Landing Site located near the town of Avery in Shoshone County, Idaho (Site). For that portion of the Site which is owned by the United States and administered by the Federal Highway Administration (FHWA), it is currently anticipated that the removal action will be conducted by FHWA under the oversight of the United States Environmental Protection Agency (EPA). For all other areas of the Site, it is presently expected that the removal action will be undertaken by Potlatch Corporation (Potlatch) and Potlatch Forest Products Corporation (PFPC) with oversight and a portion of the funding provided by EPA, or by EPA with a majority of the funding provided by Potlatch and PFPC.

II. SITE CONDITIONS AND BACKGROUND

The CERCLIS ID No. is IDD984666313 and the Site ID No. is 10FT.

A. Site Description

1. Removal site evaluation

The Site is the location of a former railroad maintenance and refueling facility for the Chicago, Milwaukee, St. Paul, and Pacific Railroad (Milwaukee Railroad). The geographical coordinates for the Site are latitude 47°14' 57" north latitude; longitude 115° 49' 16" west longitude (Figures 1, 2, and 3).

There is substantial information indicating that human health and environmental impacts are present at the Site. A petroleum plume of heavy oil and diesel is present in subsurface soil and groundwater and is migrating toward and discharging to the St. Joe

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River. Additionally, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), carcinogenic and non-carcinogenic polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and metals are present in subsurface soil and groundwater at the Site.

2. Physical location

The Site was used as a switching station and light maintenance facility for the Milwaukee Railroad from 1907 until 1977. The facility included a turntable, roundhouse, machine shop, fan house, engine house, boiler house, storehouses, coal dock, oil tanks, and a pump house. Activities included refueling trains, using solvents to clean engine parts, cleaning locomotives, and maintaining equipment. The facility was located at the end of an electric rail line from the east; at the facility, trains switched to fuel oil and/or diesel locomotives. Fuel oil was stored on-Site in a 500,000-gallon aboveground storage tank (AST). The Milwaukee Railroad began to operate electric locomotives in the mid-1910s and continued until the mid-1970s.

Figure 4 illustrates a historical railroad facility diagram, and Figure 5 presents this diagram superimposed on a recent aerial photograph of the Site. The locations of relevant features are indicated and include the turntable, machine shop, cinder pit, boiler house, oil and coal bins, 500,000-gallon diesel and fuel oil AST (indicated as the "50' oil service tank" on Figures 4 and 5), other oil tanks, and associated piping.

The Site is within the narrow St. Joe River Valley, which is in the St. Joe National Forest District of the Idaho Panhandle National Forests. There are generally steep mountains to the north and south of the St Joe River, including directly north of Highway 50 from the Site. Land uses in the area around the Site are largely rural and recreational, which is consistent with its location surrounded by a national forest. The St. Joe River is a popular recreational waterway that is often used for kayaking, rafting, and fishing. There are several areas of commercial land nearby, including a motel and recreational vehicle park across the river.

The St. Joe River is used for wildlife habitat, recreation, and drinking water for downstream residents. The segment of the St. Joe River adjacent to the Site that could be impacted by contaminants found at the Site has the following designations: special resource water, domestic water supply, primary contact recreation, cold water communities, and salmonid spawning. The following threatened or endangered species are present in the vicinity of the Site: Canada lynx (*Lynx canadensis*) and Bull trout (*Salvelinus confluentus*).

3. Site characteristics

The Milwaukee Railroad owned the Site from 1907 to 1980 and operated at the Site from approximately 1907 to 1977. The Milwaukee Railroad initiated a bankruptcy reorganization proceeding in 1977 which was completed in 1985. The successor

corporation to the Milwaukee Railroad is CMC Heartland Partners (CMC). A bankruptcy liquidation proceeding was initiated by CMC in 2006.

Potlatch acquired an approximate 5-acre portion (Section 16) of the Site from the Milwaukee Railroad in 1980. Many of the former Milwaukee Railroad facilities, including the turntable, roundhouse, engine house, machine shop, and cinder pit, were located on the portion of property obtained by Potlatch. Prior to this purchase, from 1973 to 1980, Potlatch leased portions of the Site from the Milwaukee Railroad. After acquiring the land, Potlatch leveled and graded the property. Potlatch has used the property for temporary log storage, an employee bunkhouse, and a private rail line. Portions of the property have also been leased by Potlatch to tenants for log storage, parking, and trailer sites. The buildings and equipment associated with the former Milwaukee Railroad maintenance facility are no longer visible at the Site. EPA does not have definitive information about the disposition of these materials. Potlatch transferred its property ownership interests at the Site to PFPC in 2005.

As part of the bankruptcy reorganization of the Milwaukee Railroad, a portion (Section 15) of the Site reverted back to the family which owned this property prior to the operations of the Milwaukee Railroad, and this family subsequently sold the property to David Thierault. In 1996, David Thierault in turn sold this approximate 5-acre portion of property to Larry and Ethyl Bencik (Benciks), who currently own the property and use it for a vacation residence. Historical railroad facilities on this portion of the Site included an office, store house, oil pipes, and sand, coal, and oil storage. Based on the historical facility diagram, this portion of the Site may also have been the area where most of the rail car refueling occurred during the operation of the Milwaukee Railroad.

The original railroad grade portion of property along the northern edge of the Site was acquired by the United States by eminent domain in 1986. FHWA constructed and expanded State Highway 50 along this property. Although the United States continues to own this property, FHWA provided an easement right-of-way in 1992 allowing Shoshone County to operate and maintain State Highway 50. This portion of the Site extends to the shoulder north of the highway, where the former Milwaukee Railroad roundhouse AST was located, and where Potlatch re-injected untreated groundwater from a 1990s pump-and-treat system after processing through an oil/water separator.

The maintenance facility at the Site was related to several other Milwaukee Railroad facilities located approximately 0.75 miles east in the town of Avery. In the town there was a passenger terminal and Substation No. 14, an electric substation that provided electricity for the electric rail line to the east.

a. Release or threatened release into the environment of a hazardous substance, or pollutant, or contaminant

The contaminants of concern at the Site include VOCs, SVOCs, PAHs, PCBs, and metals, which are all hazardous substances as defined by Section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA),

42 U.S.C. § 9601(14), and Section 311 of the Federal Water Pollution Control Act, also referred to as the Clean Water Act (CWA), 33 U.S.C. § 1321. These hazardous substances are mixed throughout the Site with oil, which is another one of contaminants of concern, as defined in Section 311 of CWA, 33 U.S.C. § 1321, and Section 1001(23) of the Oil Pollution Act (OPA), 33 U.S.C. § 2701(23).

Data regarding the nature and extent of the contaminants of concern found at the Site are summarized below. A more thorough discussion of the Site investigations and data is found in the project Engineering Evaluation/Cost Analysis (EE/CA) document.¹

i. Idaho Department of Environmental Quality (IDEQ) late 1980s Site Investigation

In the late 1980s, the State of Idaho Division of Environmental Quality (IDEQ) of the Idaho Department of Health (now the State of Idaho Department of Environmental Quality) began to investigate the Site because of the presence of visible oil discharges to the St. Joe River from the Site riverbank. The investigation included installation of several monitoring wells and test pits in the late 1980s and early 1990s. These investigations determined that the oil included a mix of diesel and heavy oil and was present at the water table throughout the Site, with oil thicknesses exceeding a depth of four feet in some locations.

ii. EPA 1992 Site Inspection

In 1992, URS Consultants, Inc., (URS) performed an investigation at the Site as a contractor to EPA. URS collected soil, groundwater, and surface water samples from the Site and vicinity for laboratory analysis. The results indicated the presence of VOCs, SVOCs, metals, and PCBs. Benzene, arsenic, and lead were detected in an on-Site monitoring well at concentrations that exceeded their respective federal Maximum Contaminant Levels (MCLs).

iii. Potlatch 2005 to Present Light Non-Aqueous Phase Liquid (LNAPL) Discharge Maintenance

Beginning in 2002, and on a continuing basis thereafter, IDEQ has observed oil discharges to the St. Joe River from the Site. IDEQ recommended that Potlatch place oil absorbent booms in the river to contain the discharges. Although the booms were supposed to be deployed and maintained consistently while any discharges of oil were present, actual boom deployment was intermittent and incomplete. On multiple occasions since 2005, IDEQ and EPA have observed light non-aqueous phase liquid (LNAPL) discharges to the river with no booms in place. Additionally, EPA has observed oil "blooms" rising from the river bed several feet away from the river bank.

¹ Ecology and Environment, Inc. December 2010. Draft Final Engineering Evaluation and Cost Analysis for the Avery Landing Site, Avery, Idaho. Prepared for U.S. Environmental Protection Agency, Region 10, Seattle, Washington.

Furthermore, Potlatch's use of the booms was not subject to a comprehensive containment and LNAPL recovery plan or a schedule agreed upon with any government agency.

iv. EPA 2007 Removal Assessment

In a letter dated 11 September 2006, IDEQ requested the assistance of EPA to investigate the Site and the continued oil discharges to the St. Joe River. In 2007, EPA performed a removal assessment at the Site to investigate the discharges of oil and hazardous substances to surface waters and shorelines of the United States in potential contravention of the CWA, and releases of hazardous substances in potential contravention of CERCLA. EPA installed 13 soil borings, of which six were completed as monitoring wells. The investigation focused on the eastern area of the Site, including portions of both the Potlatch/PFPC and Bentsen properties.

EPA observed oil in surface water, groundwater, and subsurface soil throughout the Site at levels that exceeded applicable state regulatory standards. Oil was observed floating on groundwater in monitoring and recovery wells with measurable thicknesses up to 0.88 feet. Subsurface soils collected from soil borings were saturated with oil. EPA observed active oil discharges and "blooms" to the St. Joe River in potential contravention of the CWA and state regulations. An approximate 200-foot stretch of the Site's river bank contained evidence of past-oil discharges, including oil staining on rip rap at the water level. Analytical results confirmed the presence of diesel and heavy oil (Bunker C), which was consistent with historical documentation about the nature of the oil releases. EPA's investigation also indicated the area of the free oil plume was larger than previously estimated.

Subsurface soil and groundwater samples collected from the Site contained several hazardous substances (including carcinogenic PAHs) that exceeded applicable state and federal guidelines. Several metals (arsenic, iron, lead, manganese, and mercury) also exceeded applicable guidelines, although some of these metals may be naturally elevated in the region. The PCB Aroclor-1260 was detected in several Site soil samples and in a sample of the oil, and Aroclor-1260 exceeded the state guideline in one groundwater sample. The on-Site domestic well, which is downgradient of the Site's LNAPL plume area, contained concentrations of Site contaminants, including anthracene, diesel-range organics (DRO), and arsenic.

In addition to the visible oil discharges to the St. Joe River, a sample of surface water contained four PAHs (benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, and chrysene) at concentrations that exceeded Idaho Risk Evaluation Manual guidelines, and the PAH benzo[a]pyrene also exceeded the federal ambient water quality criteria. When compared to sediment guidelines, PAH compounds detected in the soil samples exceeded several consensus-based sediment quality guidelines.

v. Potlatch 2009/2010 Draft Engineering Evaluation/Cost Analysis

In 2008, Potlatch/PFPC and EPA entered into an Administrative Settlement Agreement and Order on Agreement (ASAOC), CERCLA Docket No. 10-2008-0135, requiring Potlatch/PFPC to complete an Engineering Evaluation/Cost Analysis (EE/CA), a Biological Assessment (BA), and a Cultural Resources Evaluation (CRE) for the Site. Work associated with the EE/CA was undertaken by Golder Associates, Inc. (Golder) as a consultant to Potlatch/PFPC. As a part of the EE/CA, Potlatch/PFPC agreed to perform additional characterization field work at the Site, which was completed in the late summer and fall of 2009.

The field work included the sampling of subsurface soil (from test pits and boreholes), groundwater (from existing and four newly installed monitoring wells), LNAPL (from groundwater wells and surface water discharges), sediment, and surface water. LNAPL was observed in subsurface soil, groundwater, sediment, and surface water. Analytical results indicated that DRO/heavy oils, SVOCs (including carcinogenic PAHs), PCBs, VOCs, and metals were detected in subsurface soil and sediment. DRO/heavy oils and carcinogenic PAHs were detected in groundwater. Surface water contained carcinogenic and non-carcinogenic PAHs and metals.

Based on observations recorded during field work, Golder updated the estimated extent of the LNAPL plume. Golder also observed evidence of buried debris and trash in the western half of the Site.

A component of the Potlatch/PFPC EE/CA investigation was a treatability study to evaluate soil washing as a potential treatment method for oil-contaminated soil. The results of the treatability study indicated that soil washing could effectively achieve removal efficiencies of 96 to 97 percent (%) for DRO and heavy-oil range hydrocarbons.

Beginning 8 April 2010, EPA assumed responsibility for completion of the Site EE/CA, BA, and CRE due primarily to an excess of deficiencies in the draft EE/CA report submitted by Potlatch/PFPC. EPA communicated its concerns about the deficiencies to Potlatch/PFPC and its intent to complete the EE/CA report.

4. NPL status

The Site is not listed on the National Priority List (NPL) nor has it been proposed for the NPL, and the Site is not expected to be referred to EPA's Remedial Program.

5. Maps, pictures, and other graphic representations

Refer to attached Figure 1 (Site Location Map), Figure 2 (Site Vicinity Map), and Figure 3 (Site Layout Map), Figure 4 (Historical Railroad Facility Layout), Figure 5 (Historical Railroad Facility Layout with recent Aerial Image of Site), and Figure 6 (LNAPL Plume

Area Estimates [2000, 2007, 2009] and Product Observations in Soil Borings and Test Pits [2007 and 2009]).

B. Other Actions to Date

1. Previous actions

There have been two previous cleanup actions conducted at the Site as discussed below; however, these actions were not conducted under the authority of CERCLA or the CWA.

a. Potlatch 1994 Product Recovery System

In 1994, Potlatch installed a product recovery system at the Site pursuant to an agreement entered into with IDEQ. The system included several trenches installed near the bank of the St. Joe River. Groundwater and oil were pumped from these trenches and then sent through an oil/water separator. Recovered oil was stored in an on-Site AST for later off-Site disposal. Recovered groundwater was pumped underneath Highway 50 and re-injected into the ground through an approximately 360-foot long re-infiltration trench installed north of the road. The system operated until approximately 2000 and recovered a total of 1,290 gallons of oil.

b. Potlatch 2000 Product Containment Barrier

By 2000, despite the operation of the product recovery system, product discharges from the Site continued to be observed on the banks of the St. Joe River. Under direction from IDEQ, Potlatch installed a restraining barrier along the bank in 2000 to help prevent oil from reaching the river. Potlatch excavated material away from the bank, installed a polyvinyl chloride (PVC) liner to act as a barrier wall to prevent oil discharges to the river, and backfilled with sand, gravel, and riprap along the bank. Potlatch also installed a series of product recovery trenches and wells to recover any oil that might collect against the barrier. With the new restraining barrier, Potlatch proposed to recover additional oil if oil was present in Site recovery wells at a thickness of 0.05 feet (0.6 inches) or greater. Potlatch continued to monitor the monitoring wells on Site for oil, but never operated the oil recovery system again.

2. Current actions

There are no government or private cleanup activities that are currently being performed at the Site.

C. State and Local Authorities Roles

1. State and local actions to date

IDEQ has been involved with review of Site-related documents. Written comments regarding the EE/CA were received from IDEQ.

2. Potential for continued state and local response

IDEQ is expected to remain involved in future Site cleanup activities.

It is anticipated that IDEQ will be provided enforceable environmental covenants, limiting certain activities and uses at the Site, pursuant to the Idaho Code, Title 55 Chapter 30, Uniform Environmental Covenants Act.

3. Government-to-government consultation with the Coeur d'Alene Tribe

Government-to-government consultation was initiated by EPA with the Coeur d'Alene Tribe (Tribe). No comments were received from the Tribe.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

The current conditions at this Site meet the following factors which indicate that the Site is a threat to the public health or welfare or the environment, and that a removal action is appropriate under the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 C.F.R. § 300.415(b)(2). Given that the contamination at the Site appears to primarily consist of a commingled mixture of hazardous substances and oil, EPA is addressing this contamination under 40 C.F.R. Part 300, Subpart E (Hazardous Substance Response), but should it prove to be appropriate and necessary to do so, EPA may also address conditions at the Site under 40 C.F.R. Part 300, Subpart D (Operational Response Phases for Oil).

A. Threats to Public Health or Welfare

1. Exposure to nearby human populations, animals, or the food chain from hazardous substances, pollutants or contaminants mixed with oil (40 C.F.R. § 300.415[b][2][I])

The contaminants of concern found at the Site include VOCs, SVOCs, carcinogenic and non-carcinogenic PAHs, PCBs, metals mixed with oil. Refer to attached Table 1 for a discussion of the human health effects associated with the Site contaminants of concern. As with all hazardous substances mixed with oil, the nature and extent of the health effect will depend on many factors including composition, concentration, and length of time exposed.

The complete exposure pathways for groundwater and soil include dermal contact, ingestion, and inhalation. Nearby seasonal residents, recreationists, and/or trespassers could be exposed to the Site contaminants found in subsurface soil and groundwater if engaged in subsurface disturbance activities. Although not open to the public, access to the Site is unrestricted and entry and egress can be gained from both land and water. Use of an existing on-Site domestic drinking water well has been discontinued; however, the well is not known to have been abandoned in accordance with State regulations. There no physical barriers restricting access or institutional controls such as well drilling prohibitions to minimize the potential for human exposure to Site contamination by limiting land or resource use.

2. Minimization or elimination of the effects of weather conditions that may cause hazardous substances, pollutants or contaminants to migrate or to be released/discharged (40 C.F.R. § 300.415[b][2][v])

Seasonal weather conditions facilitate the migration and release of Site contaminants. Groundwater elevations range from approximately 9 to 16 feet below ground surface (bgs), and the elevations are likely influenced by surface water flows in the St. Joe River. The vertical fluctuations will affect the movement of contaminants in the vadose zone which can serve as a source of groundwater contamination. Spring time snow melt, rainfall or other forms of run-off inducing events will tend to spread the contaminated materials throughout and further from the Site. In such instances, percolating water may come in contact with Site contaminants and carry dissolved material to the groundwater, as well as cause the continued hydraulic expansion of the contaminated zone and movement of the contaminant plume.

3. Availability of other appropriate federal or state response mechanisms to respond to the release (40 C.F.R. § 300.415[b][2][viii])

The proposed non-time-critical removal action is expected to be conducted by FHWA and either Potlatch/PFPC or EPA in accordance with CERCLA and CWA. At this point, there are no known other appropriate federal or state response mechanisms capable of providing the appropriate resources in the prompt manner needed to address the potential human health and ecological risks associated with the hazardous substances mixed with oil described herein.

B. Threats to the Environment

1. Exposure to nearby human populations, animals, or the food chain from hazardous substances, pollutants or contaminants (40 C.F.R. § 300.415[b][2][i])

Ecological receptors can become exposed to Site contaminants through direct contact with the contaminants of concern mixed with oil and with water and sediments

contaminated by the contaminants of concern mixed with oil; ingestion of the contaminants of concern mixed with oil and water and sediments contaminated by the contaminants of concern mixed with oil; and through the food chain by consuming animals and plants that have accumulated Site-related contamination.

IV. ENDANGERMENT DETERMINATION

The actual or threatened releases of hazardous substances within and from the Site may present an imminent and substantial endangerment to public health, or welfare, or the environment within the meaning of Section 106(a) of CERCLA, 42 U.S.C. § 9606(a).

The actual or threatened discharges of hazardous substances or oil at the Site, may be an imminent and substantial threat to the public health or welfare of the United States, including fish, shellfish, wildlife, public and private property, shorelines, beaches, habitat, and/or other living and nonliving natural resources under the jurisdiction or control of the United States, within the meaning of Section 311(e) of CWA, 33 U.S.C. § 1321(e). Further, there may be a discharge or substantial threat of discharge of hazardous substances or oil into or on navigable waters, on the adjoining shorelines to the navigable waters, or that may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States, within the meaning of Section 311(c) of CWA, 33 U.S.C. § 1321(c).

V. CONSIDERED AND SELECTED ACTIONS AND ESTIMATED COSTS

The goal of the non-time-critical removal action is to prevent the release and discharge of hazardous substances and oil to the St. Joe River and to reduce hazardous substances to acceptable human health and ecological risk-based concentrations at the Site.

The following removal action alternatives were developed and individually evaluated against the short- and long-term aspects of three broad criteria - effectiveness, implementability, and cost:

- Alternative 1 - No Action;
- Alternative 2 - LNAPL Extraction and Ex-situ Thermal Desorption of Soils;
- Alternative 3 - LNAPL Extraction and Ex-situ Soil Washing; and
- Alternative 4 - LNAPL Extraction and Off-Site Disposal.

Once the alternatives were individually assessed against the criteria, a comparative analysis was conducted to evaluate the relative performance of each alternative in relation to each of the criteria. This is in contrast to the individual analysis in which each alternative was analyzed independent without consideration of other alternatives.

Based on the individual and comparative analysis of removal action alternatives, the recommended removal action is Alternative 4 - LNAPL Extraction and Off-Site Disposal. The following is a summary of Alternative 4.

A detailed description and individual and comparative analysis of removal action alternatives are found in Sections 4, 5, and 6 of the project EE/CA.

A. Recommended Actions

1. Recommended action description

Engineering and Institutional Controls

Institutional controls will minimize the potential for human exposure to contamination by limiting certain activities and use of resources, including groundwater. Enforceable environmental covenants pursuant to the Idaho State UECA will be developed and put into effect to provide such limitations.

Excavation and Removal of Hazardous Substances/Oil

The hazardous substances and oil serve as a source of groundwater contamination, and source removal is the most effective way to prevent further contamination. An estimated 90,770 cubic yards (yds³) of clean overburden will be excavated and set aside for reuse as backfill material. An estimated 47,000 yds³ of contaminated soil will be excavated, and this material will be shipped off-Site for disposal at a facility operating in compliance with the Resource Conservation and Recovery Act (RCRA) or other applicable Federal or state requirements. Based on existing data, the excavation would extend to a depth of approximately 2 feet below the seasonal low groundwater level, or to an average depth of 17 feet below ground surface. The level of design detail to achieve the removal of contamination to the "maximum extent practicable" will be determined during the design phase of the removal action. This determination will be based on best professional judgment that considers Site-specific conditions and field measurements, rather than exclusively contaminant concentrations. Removal of the source materials will enable natural processes that can degrade contaminants in soil and groundwater. Similarly, discrete areas of contamination in the western portion of the Site, where oil and sheen were observed in 2009 test pits, will also be addressed through hot-spot excavation focusing on saturated soil. Prior to backfilling, confirmation soil samples will be collected to determine compliance with the cleanup objectives or whether additional soil removal will be necessary. Excavations will then be backfilled with stockpiled overburden and/or clean backfill obtained from off-Site, and covered with approximately 6 inches of topsoil and revegetated once final grading is complete.

The exact method of oil recovery will also be determined during the design phase of the removal action. The selection of the recovery system will be based on maximizing the removal of oil floating on the water table in excavations with little or no recovery of water. If groundwater is co-produced or enters the excavations, the water will be

treated via an oil/water separator with carbon filter polishing. The recovered material will be transported to an appropriate off-Site treatment and/or recycling facility. The treated groundwater will be discharged to the St. Joe River and/or allowed to passively infiltrate the soil.

Removal of Existing Treatment/Recovery System and Debris

The 1994 oil recovery system and the 2000 oil containment barrier, as well as debris such as foundations from historical Site operations, will be removed, and where practicable, reused as backfill materials or disposed of at an appropriate off-Site facility.

Construction of the St. Joe River Bank

The removal of the 2000 oil containment barrier will require reconstruction of the shoreline of the St. Joe River. The shoreline will be designed and constructed to the maximum extent practicable to resemble pre-construction form and function, and to avoid and minimize adverse effects on the aquatic environment.

Construction Best Management Practices

Appropriate and practicable construction Best Management Practices (BMPs) will be implemented during cleanup activities, including removal of contamination and construction of the St. Joe River shoreline, to protect workers, the community, and the environment from short-term construction impacts such as erosion and sedimentation, fugitive dust, noise, use of public roadways, and other similar potential impacts. Additionally, work within the St. Joe River will occur during periods of low-flow to ensure that adverse effects to the aquatic environment are minimal.

Non-hazardous wastes such as inert construction debris will be reused, disposed of, or recycled in accordance with appropriate solid waste disposal or recycling requirements.

Greener Cleanup Best Management Practices

Appropriate and practicable greener cleanup BMPs will be implemented during cleanup activities, including, but not limited to, minimizing energy consumption (e.g., using new and well-maintained equipment), minimizing generation and transport of fugitive dust (e.g., implementation of construction BMPs), minimizing waste generation through reuse (e.g., concrete and riprap) and recycling (e.g., recovered oil), minimizing impacts to water resources (e.g., implementation of construction stormwater and surface water BMPs), minimizing areas requiring activity or use limitations (e.g., source removal), minimizing unnecessary soil and habitat disturbance, and minimizing lighting and noise disturbance (e.g., implementation of construction BMPs).

Long-term Monitoring and Maintenance

A long-term monitoring program is expected to be conducted by the owner(s) of property at the Site, and subject to IDEQ oversight under UECA restrictive covenants, and will be implemented to monitor contaminant degradation in soil and groundwater. As part of the monitoring program, periodic groundwater monitoring will be conducted using the existing and possibly newly installed monitoring wells to monitor natural attenuation of Site contaminants.

2. Contribution to remedial performance

The recommended response action may be the first and only action or one of a series of actions depending on post-removal activities such as those necessary to maintain the protectiveness of the cleanup. If future actions are required, the proposed removal action will likely not impede those actions based upon available information.

3. Engineering Evaluation/Cost Analysis (EE/CA)

The EE/CA Approval Memorandum was signed and issued by EPA on 25 March 2008. An EE/CA document was prepared by EPA, and on 7 January 2011, EPA released the EE/CA document for comment and evaluation to the FHWA, IDEQ, Coeur d'Alene Tribe, and Potlatch/PFPC. Based on the analysis of the nature and extent of contamination and on the cleanup objectives for the Site, a limited number of removal action alternatives were identified and selected for detailed analysis. The EE/CA identified a recommended removal alternative that individually and comparatively best satisfied the following evaluation criteria – effectiveness, implementability, and cost.

On 7 January 2011, EPA released the EE/CA document for public comment and evaluation. A notice of availability and brief description of the EE/CA document was published in the St. Maries Gazette. A 45-day public comment period was held from 26 January 2011 through 11 March 2011. Additionally, a web site was established to allow public viewing of the EE/CA document.

EPA received written comments from IDEQ (letter dated 11 March 2010) and Potlatch/PFPC (letter dated 11 March 2010). Government-to-government consultation was also initiated with the Tribe (letter dated 12 January 2011); however, no written comments were received from the Tribe.

A written summary and response by EPA to public comments received about the EE/CA is attached.

4. Applicable or relevant and appropriate requirements

The NCP requires that removal actions attain ARARs under federal or state environmental or facility siting laws, to the extent practicable considering the exigencies of the situation (40 C.F.R. § 300.415[j]). In determining whether compliance with ARARs

is practicable, EPA may consider the scope of the removal action and the urgency of the situation (40 C.F.R. § 300.415[j]).

Refer to attached Table 2 for state and federal ARARs.

5. Project Schedule

The removal action project is expected to require approximately 3½ months of work at the Site.

C. Estimated Costs

An analysis of relative costs of the proposed actions is found in Section 6 and Appendix C of the EE/CA. In December 2010 when the EE/CA was completed, the cost for the recommended removal action was approximately \$8,500,000. The cost is currently estimated to be \$9,770,000, with the increased amount primarily due to a more recently anticipated need to provide for temporary lodging for Site workers and a more conservative estimate of the extent of potentially contaminated soil in the western portion of the Site.

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

If the response action should be delayed or not taken:

- Hazardous substances will remain as potential human health and ecological threats based on direct contact, ingestion, and inhalation exposure pathways, and will remain a continuing source of solid and dissolved-phase contaminants to groundwater that migrate from the Site through groundwater and/or surface water; and
- Oil contamination, in many instances commingled with hazardous substances, will continue to migrate toward and be discharged or released to the St. Joe River.

VII. OUTSTANDING POLICY ISSUES

None.

VIII. ENFORCEMENT

Refer to attached confidential enforcement addendum.

IX. DETERMINATION

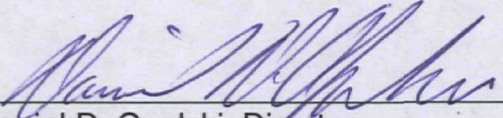
This decision document sets forth the recommended removal action for the Site that has been developed in accordance with CERCLA, and is consistent with the NCP and CWA. The recommended removal action is based on the administrative record for the Site.

Conditions at the Site meet the NCP 40 C.F.R. § 300.415(b) criteria for a removal action and I request your approval of the recommended removal action. The recommended removal action is expected to be conducted on federal property by FHWA under the oversight of EPA, and on all other property by Potlatch/PFPC with oversight and part of the funding provided by EPA or by EPA with a majority of the funding to be provided by Potlatch/PFPC. However, if FHWA and Potlatch/PFPC are unwilling or unable to fund or conduct the recommended removal action, and EPA must undertake all removal action work, the total project ceiling is currently estimated to be \$9,770,000.

X. APPROVAL/DISAPPROVAL

By the approval which appears below, EPA selects the removal action for the Site as set forth in the recommendations contained in this Action Memorandum.

Approve: X



Daniel D. Opalski, Director
Office of Environmental Cleanup

Disapprove: _____

Daniel D. Opalski, Director
Office of Environmental Cleanup

Effective date of this Decision: _____

XI. ATTACHMENTS

- Confidential Enforcement Addendum
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- Figure 1 (Site Location Map)
- Figure 2 (Site Vicinity Map Map)
- Figure 3 (Approximate Boundaries of Site and Site Subareas)
- Figure 4 (Historical Railroad Facility Layout)
- Figure 5 (Historical Railroad Facility Layout with Recent Aerial Image of Site)
- Figure 6 (LNAPL Plume Area Estimates and Product Observations in Soil Borings and Test Pits)
-
- Table 1 (Contaminants of Concern)
- Table 2 (ARARs)
-
- EE/CA Responsiveness Summary

Source: Maptech, Inc. 2001.



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Seattle, Washington

AVERY LANDING SITE
Avery, Idaho

0 1.5 3
Approximate Scale in Miles

Figure 1

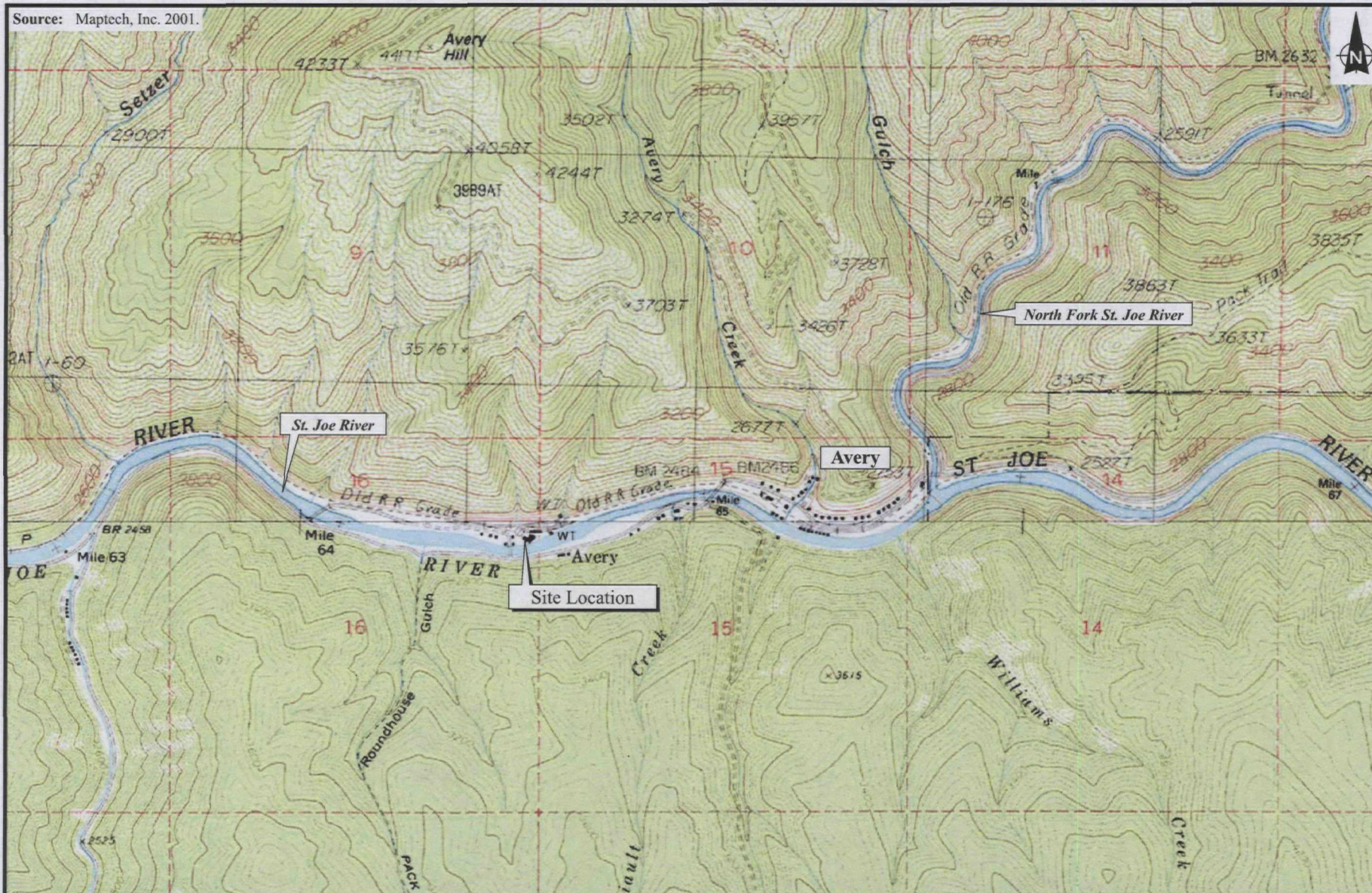
SITE LOCATION MAP

Date:
5-2-11

Drawn by:
AES

10:START-3\08050006\fig 1

Source: Maptech, Inc. 2001.



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Seattle, Washington

AVERY LANDING SITE Avery, Idaho

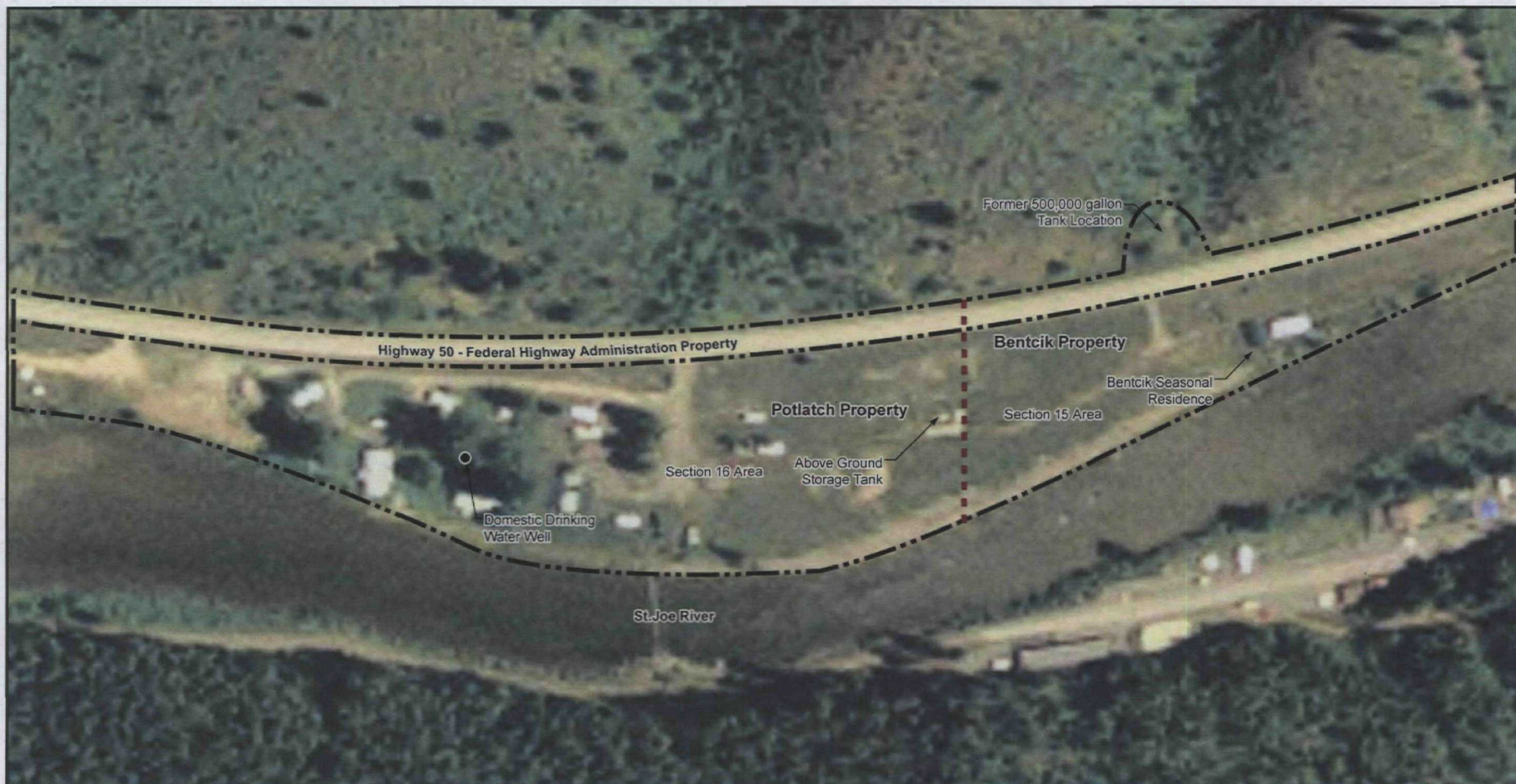
0 1000 2000
Approximate Scale in Feet

Figure 2 SITE VICINITY MAP

Date:
5/2/11

Drawn by:
AES

10:START-3\08050006\fig 2



Source: Golder 2010a.

LEGEND

--- Property Line & Section 16-15 Division Line

[] Site Boundary



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Seattle, Washington

0 140
APPROXIMATE
SCALE IN FEET



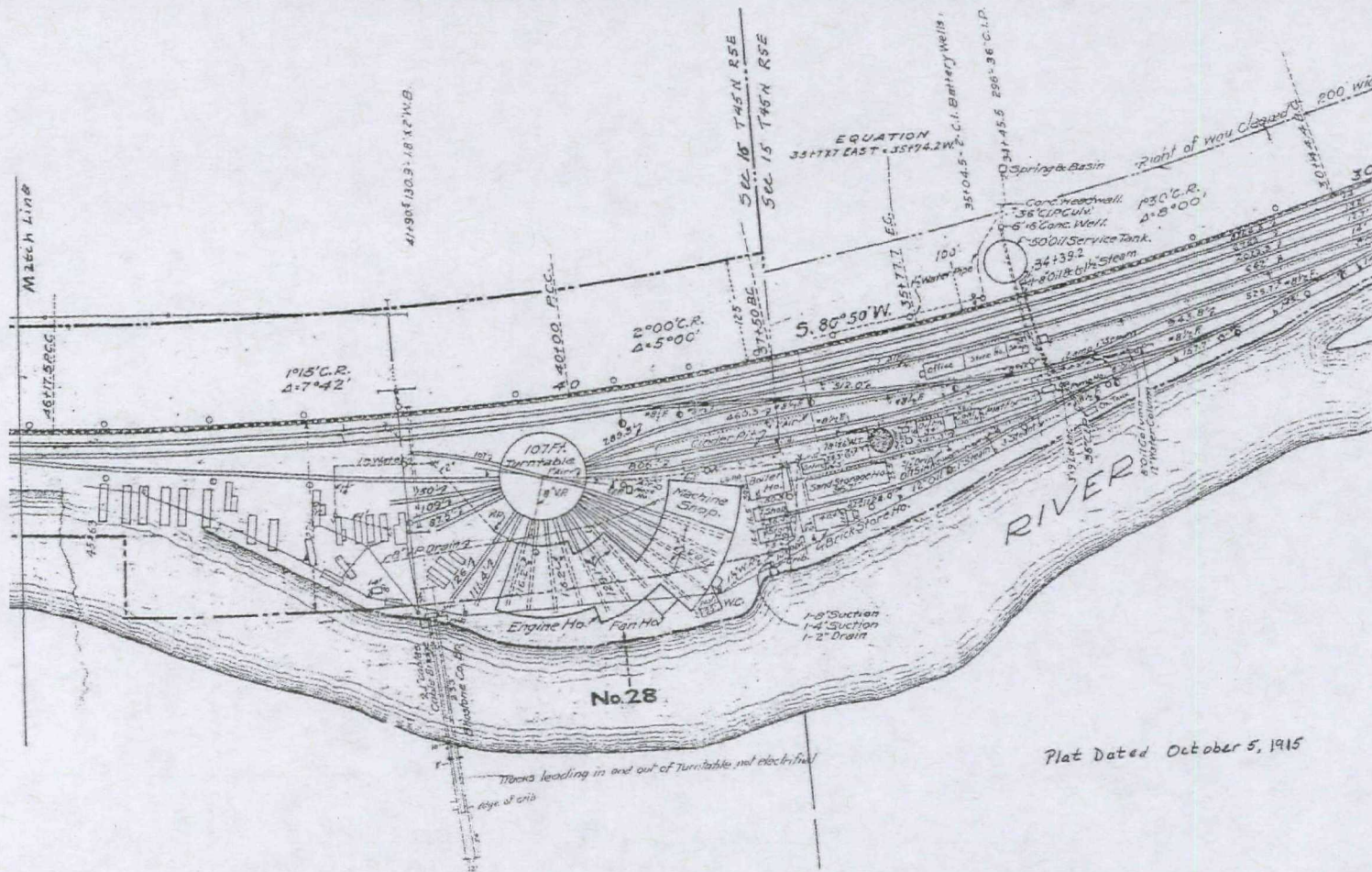
AVERY LANDING SITE
Avery, Idaho

Figure 3
SITE LAYOUT MAP

Date:
5/2/11

Drawn by:
AES

10:START-3\08050006\fig 3



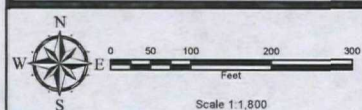
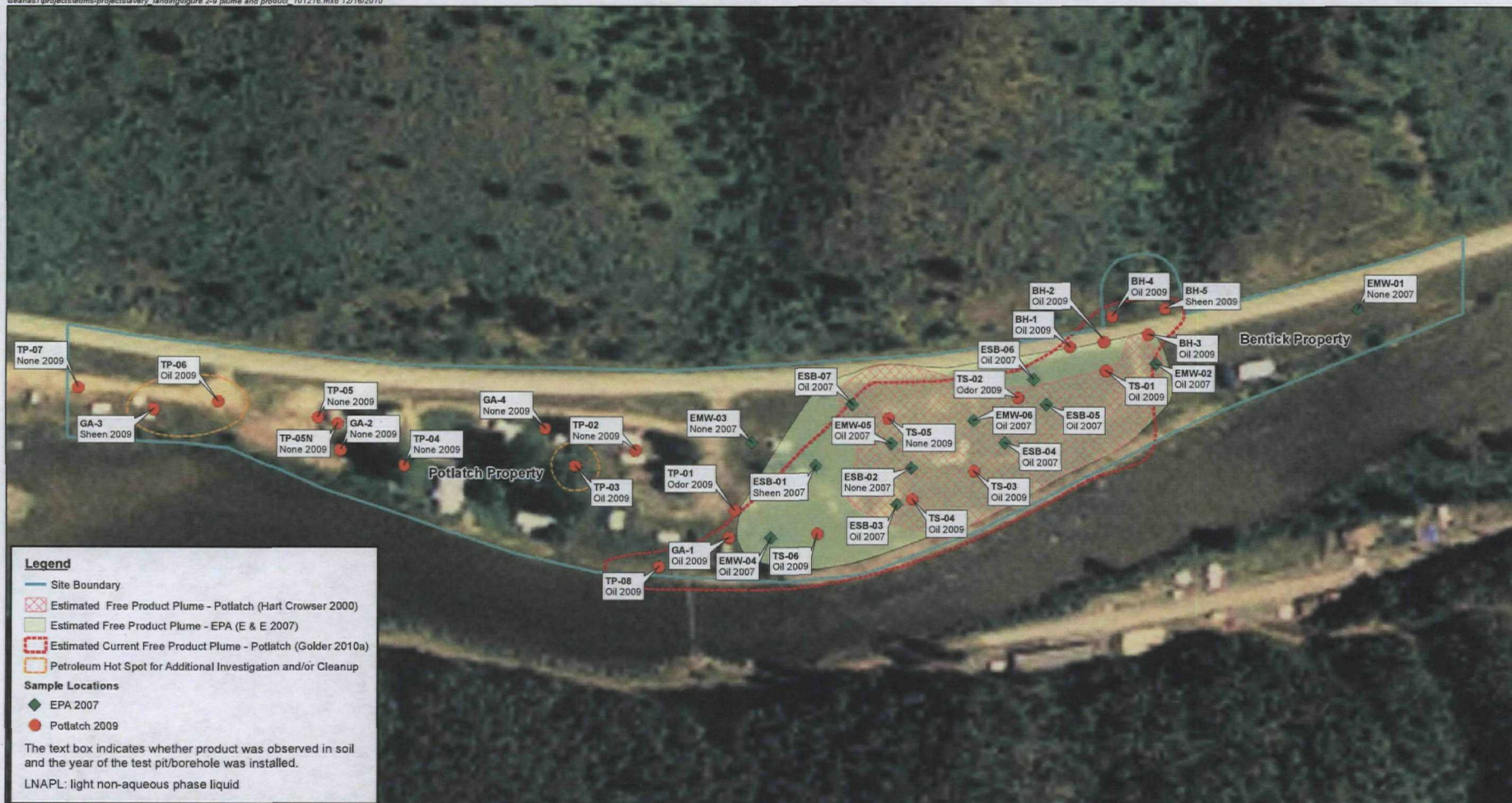
Plat Dated October 5, 1915



LEGEND:

- HISTORICAL RAILROAD TRACKS
- HISTORICAL FEATURES
- HISTORICAL PIPING





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 Seattle, Washington

AVERY LANDING SITE

Avery, Idaho

Figure 6	
LNAPL Plume Area Estimates (2000, 2007, and 2009) and Product Observations in Soil Borings and Test Pits (2007 and 2009).	
Map Source Information: Terraserver, USGS Aerial Photo	
Date: 7/22/2010	GIS Analyst: avh
Project ID: 002233.0193.01SF	

TABLE 1
CONTAMINANTS OF CONCERN

Contaminant of Concern	Human Health Effects
Polychlorinated Biphenyls	
Polychlorinated Biphenyls (Aroclors)	Chronic exposure to some PCB formulations by inhalation in humans results in respiratory tract symptoms, gastrointestinal effects, mild liver effects, and effects on the skin and eyes such as chloracne, skin rashes, and eye irritation. Epidemiological studies indicate an association between dietary PCB exposures and developmental effects. Human studies provide inconclusive, yet suggestive, evidence of an association between PCBs exposure and cancer. Animal studies have reported an increase in liver tumors in rats and mice exposed orally to all tested PCB formulations. EPA has classified PCBs as a Group B2, probable human carcinogen.
Carcinogenic Polycyclic Aromatic Hydrocarbons	
<u>Benzo(a)anthracene</u> <u>benzo(a)pyrene</u> <u>benzo(b)fluoranthene</u> <u>chrysene</u> <u>dibenzo(a,h)anthracene.</u>	Laboratory animal studies have shown that PAHs can cause harmful effects on the skin, body fluids, and ability to fight disease after both short- and long-term exposure. Other studies have shown reproductive effects, including fertility problems, birth defects, and lower birth weight. These effects have not been shown in humans. The carcinogenic PAHs have been associated with cancer after chronic exposure in both animals and humans. The types of cancer include lung, breast, gastrointestinal, pancreatic, bladder, skin, prostate, and cervical. EPA classifies benzo(a)pyrene as a B2, or probable human carcinogen.
Non-carcinogenic Polycyclic Aromatic Hydrocarbons	
Acenaphthene Methylnaphthalene isomers Fluorene Naphthalene	Chronic exposure to acenaphthene in mice caused hepatotoxicity and increased cholesterol levels. It is not known whether this chemical alone can cause effects in humans as it is typically found in PAH mixtures. It has not been shown to be a carcinogen. The information found on the health effects of these isomers are the same as for naphthalene (see below). Mice exposed for several weeks to fluorene developed red blood cell damage. It is not known whether this chemical alone can cause effects in humans as it is typically found in PAH mixtures. It has not been shown to be a carcinogen. Exposure to large amounts of naphthalene may cause a condition known as hemolytic anemia, in which red blood cells are damaged. It may also cause nausea, vomiting, diarrhea, blood in the urine, and jaundiced skin. Animals chronically exposed to naphthalene vapors developed irritation and inflammation of the respiratory tract. Mice in one study exposed to naphthalene via inhalation developed benign respiratory tract tumors. No human studies on carcinogenicity of this PAH are available, and most tests for genotoxicity have been negative. Based on the limited animal data, EPA classifies naphthalene as a C, or possible human carcinogen.

TABLE 1 CONTAMINANTS OF CONCERN	
Contaminant of Concern	Human Health Effects
Semivolatile Organic Compounds	
4-Nitroaniline	Acute exposure to 4-nitroaniline may result in skin, eye, and respiratory irritation and inflammation. No data are available to assess health effects from chronic exposure.
4,6-Dinitro-2-methylphenol	Chronic exposure in the workplace has resulted in health effects related to the cardiovascular system, endocrine system, and eyes. It can cause anemia, liver damage, and cyanosis. OSHA classifies 4,6-dinitro-2-methylphenol as a mutagen.
N-Nitrosodiphenylamine	Data on human health effects are very limited. Laboratory animals administered high levels of n-nitrosodiphenylamine in diets over a long period of time developed swelling and changes in body weight. EPA classifies this compound as a B2, or probable human carcinogen, based on two long-term studies in rats and mice that demonstrated an increase in bladder cancer and reticulum cell sarcomas.
Metals	
Arsenic	Acute high-level inhalation to arsenic dust or fumes has resulted in gastrointestinal effects (nausea, diarrhea, abdominal pain). Chronic oral exposure has resulted in gastrointestinal effects, anemia, peripheral neuropathy, skin lesions, hyperpigmentation, and liver or kidney damage in humans. Inorganic arsenic exposure in humans, by the inhalation route, has been shown to be strongly associated with lung cancer, while ingestion of inorganic arsenic in humans has been linked to a form of skin cancer and also to bladder, liver, and lung cancer. EPA has classified inorganic arsenic as a Group A, human carcinogen.
Manganese	Chronic exposure to high levels of manganese by inhalation in humans may result in CNS effects. Visual reaction time, hand steadiness, and eye-hand coordination were affected in chronically-exposed workers. A syndrome named manganism may result from chronic exposure to higher levels; manganism is characterized by feelings of weakness and lethargy, tremors, a mask-like face, and psychological disturbances. Respiratory effects have also been noted in workers chronically exposed by inhalation. Impotence and loss of libido have been noted in male workers afflicted with manganism.
Mercury	Elemental mercury primarily causes health effects when it is breathed as a vapor where it can be absorbed through the lungs. Symptoms include these: tremors; emotional changes (e.g., mood swings, irritability, nervousness, excessive shyness); insomnia; neuromuscular changes (such as weakness, muscle atrophy, twitching); headaches; disturbances in sensations; changes in nerve responses; performance deficits on tests of cognitive function. At higher exposures there may be kidney effects, respiratory failure and death.

Table 2: Potential Applicable or Relevant and Appropriate Requirements

Standard, Requirement, Criterion, or Limitation	Citation	Description	ARAR
Applicable			
Federal			
Resource Conservation and Recovery Act (RCRA), Identification and Management of Hazardous Wastes	40 CFR 261 et seq.	Specifies how to determine whether a solid waste is considered hazardous (whether listed or based on characteristic) and how to manage hazardous wastes.	Applicable
Clean Air Act (CAA), National Ambient Air Quality Standards	42 USC 7401 et seq. 40 CFR 50	Provides air quality standards for six criteria pollutants, including particulate matter, to protect public health and welfare.	Applicable
Toxic Substances Control Act	15 U.S.C § 2601 et seq.	Provides requirements for reporting, record-keeping, testing, and disposal of certain chemical substances and/or mixtures, including polychlorinated biphenyls [PCB]s.	Applicable if PCB concentrations exceed specific thresholds
Hazardous Materials Transportation Act	49 USC 1801-1813 49 CFR 107, 171-177	Regulates the transportation of hazardous waste.	Applicable (if off-site disposal of hazardous materials is included in cleanup action)
Clean Water Act--National Pollution Discharge Elimination System	33 USC § 1342	Establishes requirements for point source discharges and storm water runoff.	Applicable for any point source discharge of pollutants to surface water, including storm water runoff at the site. If response activities at the site involve clearing, grading, excavating, or other response activities that will disturb more than one acre of land resulting in storm water discharges, such activities must also comply with the substantive requirements for a Construction Stormwater General Permit to prevent or minimize the discharge of pollutants in storm water runoff from the disturbed areas to waters of the United States.
Endangered Species Act (ESA)	16 U.S.C. §§ 1531 – 1544 50 CFR Parts 17, 402	Provides for the protection of species of fish, wildlife, and plants that are listed as threatened or endangered with extinction. It also protects designated critical habitat for listed species. The Act outlines procedures for federal agencies to follow when taking actions that may jeopardize listed species, including consultation with resource agencies.	Applicable to the site for listed and proposed to be listed threatened or endangered species and their habitat areas which will, or could, be impacted by removal action. Consistent with ESA Section 7, if any federally designated threatened or endangered species, listed or proposed to be listed, are identified in the vicinity of removal work, and the action may affect such species and/or their habitat, EPA is to consult with the Department of the Interior to ensure such actions are conducted in a manner to avoid adverse habitat modification and jeopardy to the continued existence of such species.
Fish and Wildlife Coordination Act	16 U.S.C. § 661 et seq	Requires that adequate provision must be made for the conservation, maintenance, and management of wildlife resources and habitat and requires consultation with the U.S. Fish and Wildlife service and appropriate state agencies.	Applicable to the site since listed threatened or endangered species habitat areas will, or could, be impacted by response action.
Migratory Bird Treaty Act (MBTA)	16 USC § 703 et seq	Makes it unlawful to "hunt, take, capture, kill" or take various other actions adversely affecting a broad range of migratory birds, including tundra swans, hawks, falcons, songbirds, without prior approval by the U.S. Fish and Wildlife Service. (See 50 CFR 10.13 for the list of birds protected under the MBTA.) Under the MBTA, permits may be issued for take (e.g., for research) or killing of migratory birds (e.g., hunting licenses). The mortality of migratory birds due to ingestion of contaminated sediment is not	Applicable for protecting migratory bird species identified. The selected removal action to be carried out in a manner that avoids the taking or killing of protected migratory bird species, including individual birds or their nests or eggs.

Table 2: Potential Applicable or Relevant and Appropriate Requirements

Standard, Requirement, Criterion, or Limitation	Citation	Description	ARAR
		a permitted take under the MBTA.	
National Historic Preservation Act	16 USC § 470f; 36 CFR Parts 60, 63, 800	Requires federal agencies to consider the possible effects on historic sites or structures of any actions proposed for federal funding or approval. Historic sites or structures are those included on or eligible for the National Register of Historic Places, generally older than 50 years. If an agency finds a potential adverse effect on historic sites or structures, such agency must evaluate alternatives to "avoid, minimize, or mitigate" the impact, in consultation with the State Historic Preservation Office (SHPO).	Potentially applicable to removal actions if there is to be demolition of old mine, mill, or structures on the Site. In consultation with the SHPO, unavoidable impacts on historic sites or structures may be mitigated through such means as taking photographs and collecting historic records.
Archaeological Resources Protection Act	16 USC § 470aa <i>et seq.</i> ; 43 CFR Part 7	Prohibits the unauthorized disturbance of archaeological resources on public or Indian lands. Archaeological resources are "any material remains of past human life and activities which are of archaeological interest," including pottery, baskets, tools, and human skeletal remains. The unauthorized removal of archaeological resources from public or Indian lands is prohibited without a permit, and any archaeological investigations at a site must be conducted by a professional archeologist.	Applicable for the conduct of any selected response actions that may result in ground disturbance.
American Indian Religious Freedom Act	42 USC § 1996 <i>et seq.</i>	The American Indian Religious Freedom Act and implementing regulations are intended to protect Native American religious, ceremonial, and burial sites, and the free practice of religions by Native American groups. The requirements of this Act must be followed if sacred sites graves are discovered in the course of ground-disturbing activities.	Potentially applicable to a site where response actions involve disturbance/alteration of the ground and/or site terrain.
Native American Graves Protection and Repatriation Act	25 USC § 3001 <i>et seq.</i> 43 CFR Part 10 25 USC 3001 <i>et seq.</i> 43 CFR 10	Intended to protect Native American graves from desecration through the removal and trafficking of human remains and "cultural items" including funerary and sacred objects. The requirements of this Act must be followed when graves are discovered or ground-disturbing activities encounter Native American burial sites.	Potentially applicable to a site where response actions involve disturbance/alteration of the ground and/or site terrain.
Protection of Wetlands	Executive Order 11,990	Requires that potential impacts to wetlands be considered, and as practicable, destruction, loss, or degradation of wetlands be avoided. EPA promulgated regulations to implement this Executive Order under 40 CFR Part 6.	Applicable to a removal action that take place in wetlands at a site
State of Idaho			
Idaho Ground Water Quality Rule	IDAPA 58.01.11	Provides standards for the protection of groundwater in the State of Idaho. Establishes Primary Constituent Standards for the protection of human health.	Applicable for the protection of human health related to ground water uses; site located in the State of Idaho.
Idaho Water Quality Standards	IDAPA 58.01.02	Provides standards for the protection of surface water in the State of Idaho.	Applicable for the protection of surface water, including any discharges to the St. Joe River during a removal action; site is located in the State of Idaho.
Rules for the Control of Air Pollution in Idaho	IDAPA 58.01.01	Provides for the control of air pollution in Idaho	Applicable for any air discharges during a removal action; site is located in the State of Idaho.
Idaho Land Remediation Rules	IDAPA 58.01.18	Provides regulations for the cleanup of sites based on risk to human health and the environment where releases or threatened release of hazardous substances or petroleum exists.	Applicable for the cleanup of site based on risk to human health and the environment; site is in the State of Idaho.
Rules and Standards for Hazardous Waste	IDAPA 58.01.05	Regulates the handling and disposal of hazardous wastes.	Applicable for the handling and disposal of hazardous waste in the State of Idaho.
Solid Waste Management	IDAPA 58.01.06	Regulates the handling and disposal of solid waste.	Applicable for the handling and disposal of solid waste in the State of Idaho.

Table 2: Potential Applicable or Relevant and Appropriate Requirements

Standard, Requirement, Criterion, or Limitation	Citation	Description	ARAR
Relevant and Appropriate			
Federal			
National Primary Drinking Water Standards	40 CFR 141	Establishes drinking water regulations (Maximum Contaminant Levels [MCLs] and Maximum Contaminant Level Goals [MCLGs]) for primary water systems.	Relevant and appropriate (state has Ground Water Quality Rule for protection of human health)
Oil Pollution Prevention, Spill Prevention, Control, and Countermeasure (SPCC)	40 CFR Part 112	Requires facilities that could reasonably be expected to discharge oil in quantities that may be harmful into navigable waters of the United States and adjoining shorelines to develop and implement SPCC Plans.	Potentially relevant and appropriate because of ongoing discharges of oil to navigable waters of the United States
State of Idaho			
None			
Under To Be Considered (TBC) Materials			
EPA Regional Screening Levels (RSLs)	EPA RSL Table http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/index.htm	Provides risk-based screening levels for chemical contaminants at Superfund sites.	May be TBC material
Idaho Risk Evaluation Manual	IDEQ 2004, Idaho Risk Evaluation Manual.	Presents Initial Default Target Levels (IDTLs), which are risk-based concentrations derived from standardized equations that combine default exposure assumptions with EPA toxicity data. The IDTLs are considered to be protective for humans over a lifetime and meeting these levels allows unrestricted (residential) use of the property.	May be TBC material
Regional Sediment Evaluation Team, Freshwater Sediment Screening Levels for the Pacific Northwest	Regional Sediment Evaluation Team (RSET). 2006, Interim Final Sediment Evaluation Framework for the Pacific Northwest.	Presents sediment screening levels for the Pacific Northwest, including the State of Idaho.	May be TBC material
Consensus-Based Sediment Quality Guidelines for Freshwater Ecosystems	MacDonald, D.D., T. Berger, K. Wood, J. Brown, T. Johnsen, M.L. Haines, K. Brydges, M.J. MacDonald, S.L. Smith, and D.D. Shaw, 1999, A Compendium of Environmental Quality Benchmarks.	Provides consensus-based sediment quality guidelines; used for compounds for which RSET standards were not available.	May be TBC material
Surface water benchmarks	Suter, G.W. and C.L. Tsao, 1996, Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Aquatic Biota: 1996 Revision Oak Ridge National Laboratory, Oak Ridge, TN, ES/ER/TM.	Provides alternate surface water benchmarks for compounds that do not have State of Idaho standards.	May be TBC material

Key:

ARAR = Applicable or Relevant and Appropriate Requirement
 CFR = Code of Federal Regulations
 CAA = Clean Air Act
 CWA = Clean Water Act
 EPA = United States Environmental Protection Agency
 ESA = Endangered Species Act
 IDAPA = Idaho Administrative Procedures Act
 IDEQ = Idaho Department of Environmental Quality
 IDTL = Initial Default Target Levels
 MBTA = Migratory Bird Treaty Act
 MCL = Maximum Contaminant Level

MCLG = Maximum Contaminant Level Goal
 NPDES = National Pollution Discharge Elimination System
 RCRA = Resource Conservation and Recovery Act
 RSET = Regional Sediment Evaluation Team
 RSL = Regional Screening Level
 SHPO = State Historic Preservation Office
 SPCC = Spill Prevention, Control, and Countermeasure
 TBC = to be considered
 USC = United States Code

EE/CA RESPONSIVENESS SUMMARY AVERY LANDING SITE

1.0 Overview and Background on Community Involvement

On 7 January 2011, EPA released the Avery Landing Site (Site) Engineering Evaluation/Cost Analysis (EE/CA) for comment and evaluation to the U.S. Department of Transportation Federal Highway Administration, Idaho State Department of Environmental Quality (IDEQ), Coeur d'Alene Tribe, and Potlatch Corporation (Potlatch). Based on the analysis of the nature and extent of contamination and on the cleanup objectives for the Site, a limited number of removal action alternatives were identified and selected for detailed analysis. The EE/CA identified a recommended removal alternative that individually and comparatively best satisfied the following evaluation criteria – effectiveness, implementability, and cost.

On 26 January 2011, EPA released the EE/CA for public comment and evaluation. A notice of availability and brief description of the EE/CA was published in the St. Maries Gazette. A 45-day public comment period was held from 26 January 2011 through 11 March 2011. Additionally, a web site which provided the EE/CA in electronic form was established by EPA.

EPA received written comments from the IDEQ (letter dated 11 March 2010) and Potlatch (letter dated 11 March 2010). Government-to-government consultation was also initiated with the Coeur d'Alene Tribe (letter dated 12 January 2011); however, no written comments were received by EPA from the Tribe.

2.0 General Concerns and Themes

The comments revealed several broad themes. Below is a brief summary of these themes and how EPA will address the significant concerns.

2.1 *Comment Summary:*

EPA has created an advocacy document aimed at subjecting Potlatch to maximum liability under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

EPA Response:

The history of activities by various parties at the Site is based on records and documents in the administrative record. EPA has attempted to capture an accurate summary of this information, as needed, in order to describe those activities which could have resulted in contamination of the Site as well as those activities which have been attempted but failed to properly address this contamination. Each of these areas of information is important for EPA to take into consideration when making cleanup determinations.

The potential liability of Potlatch for the Site would likely be the same regardless of whether EPA relies on CERCLA or Clean Water Act (CWA) and Oil Pollution Act (OPA) response and cost authorities.

2.2 *Comment Summary:*

The cleanup criteria for petroleum hydrocarbons, metals, and other contaminants of concern in soil require clarification.

EPA Response:

The Site contaminants of concern include oil and hazardous substances that are commingled to such an extent that a removal action focused on oil will necessarily address hazardous substances as well.

The level of design detail to achieve the removal of oil and oil-saturated soil to the "maximum extent practicable" will be determined during the design phase of the removal action. This determination will be based on best professional judgment that considers Site-specific conditions and field measurements, rather than exclusively contaminant concentrations. The removal of oil and oil-saturated soil is expected to also address most of the soil contaminated with other hazardous substances. Similarly, discrete areas of contamination in the western portion of the Site, where oil and sheen were observed in 2009 test pits, will also be addressed through hot-spot excavation focusing on oil and oil-saturated soil.

The removal design phase will also address other tasks such as engineering documents, specifications, and drawings to be taken during the removal action. The scope of this effort will include soil sampling and a final long-term groundwater monitoring network.

2.3 *Comment Summary:*

Clarify the basis for metal contaminants of concern.

EPA Response:

The metal maximum concentrations shown in EE/CA Table 2-11 were compared to their respective background concentrations for the Upper Coeur d'Alene River Basin and Initial Default Target Levels (IDTLs) from the Idaho Risk Evaluation Manual. Based on this comparison, three metals - antimony, arsenic, lead - exceeded both comparisons and thus are identified as contaminants of concern. Additionally, these metals are potentially associated with historic railroad operations. For example, antimony was often used in ball bearings, cable sheeting, and solder; arsenic was used for copper and lead alloys, as well as for pesticides; and lead was used for cables, plumbing, paint, and pesticides.

2.4 **Comment Summary:**

The Site contaminants are not CERCLA hazardous substances; rather, the contaminants such as polycyclic aromatic hydrocarbons (PAHs) and metals, are constituents of oil or fuel (petroleum products) or are metals naturally occurring in native soils.

EPA Response:

EPA disagrees with the supposition that the Site contaminants are only constituents of a release of oil or are only metals naturally occurring in native soils. EPA often finds that contamination from railroad operations includes constituents of processed products derived from oil and other substances, metals, and pesticides (such as lead arsenate). For example, lubrication oil and diesel that drip from trains, along with spills and diesel exhaust, are likely sources of some PAHs at the Site. Other likely sources of PAHs associated with the historic maintenance and refueling operations include naphthalene, trimethylbenzene isomers, xylene isomers, or other processed petroleum derivatives used as industrial solvents for cleaning or dissolving water-insoluble substances such as greases and oils (e.g. Stoddard Solvent). PAH sources that are associated with historical Site activities likely include coal and coal ash from engines and coal burning stoves (e.g., benzo(a)pyrene and naphthalene), coal tar (e.g., sec-butylbenzene), creosote from ties (e.g., benzo(a)pyrene), and roofing tar. Metals are both naturally-occurring and found in man-made materials such as paint (e.g., lead), fertilizers, and pesticides (e.g., arsenic is commonly associated with railroad operations because old railroad ties may have been dipped in an arsenic solution or arsenic weed-control sprays). Other PAHs and metals sources also likely include industrial lubrication oils (such as metal working oils) and other used industrial oils (such as heat transfer fluids). Waste or used oil also contains chemicals formed when the oil is exposed to high temperatures and pressures inside an engine, as well as some metals from engine parts and degreasing. Waste or used oil can be burned in a variety of combustion systems including industrial boilers or space heaters which are common in maintenance and repair facilities. Thus, the potential sources of PAHs and metals at the Site are numerous and varied, and are not limited solely to a release of unprocessed oil.

Other contaminants are comingled with PAHs and metals on-Site. These include trichloroethylene which was commonly used as an industrial solvent, and polychlorinated biphenyls (PCBs) which were commonly used in dielectric (insulating) fluids in electric transformers and capacitors. These compounds are hazardous substances. The hazardous substances are so interspersed with oil at the Site that, as a practical matter, these contaminants cannot be separated, thus the entire Site may be subject to CERCLA and/or CWA/OPA response and funding authorities.

2.5 **Comment Summary:**

All fuel storage and refueling facilities were located on property not owned by Potlatch (i.e., Section 15).

EPA Response:

EPA believes that the discussion of each property (Section 15, Section 16, and Highway 50) relative to the locations of former railroad features, including, but not limited to, fuel storage tanks and associated piping, is consistent with available historical information.

Further, EPA agrees that there were likely many more aboveground storage tanks (ASTs) found on-Site than the 500,000 gallon AST shown in Section 15; however, EPA disagrees with the assertion that all of the other ASTs and possibly surface and subsurface distribution lines, were limited exclusively to Section 15. Varying sized ASTs (and coal and wood bins) were likely found throughout the Site to provide heat and to support railroad operations. Based on the 5 October 1915 Historical Railroad Facility Layout (EE/CA Figure 2-4), there are an array of structures such as a boiler house, engine and maintenance houses, maintenance shop, and other shops and/or cabins where ASTs (and storage bins for coal and wood) were likely present. It is also unknown exactly how much or how little petroleum product dripped or was spilled in proximity of the 500,000 AST or otherwise dripped, spilled, or disposed of anywhere else on-Site. The same figure also shows other features such as a cinder pit where locomotives likely disposed of ash, along with possibly ash from other sources. Additionally, railroad operations were conducted at the Site for approximately 70 years, during which permanent and temporary structures could have come and gone without notice or recordation.

2.6 Comment Summary:

The removal action alternatives considered by EPA did not include other potential alternatives such as cut-off walls, institutional controls, and using the contaminated material as a road base material.

EPA Response:

EPA initially identified and screened several general response action alternatives for each media of interest including institutional controls, chemical and thermal extraction, containment/collection/treatment, and excavation. The selected representative technologies were reduced based on an understanding of the nature and extent of contamination and on the cleanup objectives.

EPA need consider only the most qualified cleanup technologies that apply to the media or source of contamination, and only a limited number of alternatives are selected for individual and comparative analysis. In this instance, each of the foregoing alternatives, along with others, were considered. Based on the analysis of the nature and extent of contamination and on the cleanup objectives several alternatives were excluded from further analysis. For example, the following alternatives were not selected as discussed:

- The recycling of the contaminated soils to form paving material was discarded because of many and varied concerns related to effectiveness and implementability such as the chemical and physical characteristics of the contaminated media, the constituents of concern found in the contaminated media including PCBs, compatibility with asphalt mix requirements, processing and emission control requirements, quantity of contaminated media, and weather.

- The installation of a groundwater containment, collection, and treatment system was discarded because it would not address source materials and because of the unpredictable time frame required for aquifer restoration and attendant long-term maintenance and monitoring requirements.

2.7 Comment Summary:

A removal design/removal action schedule was not included as part of the EE/CA.

EPA Response:

An approximate time frame for completion of each removal action alternative is provided in the EE/CA. EPA will determine the general schedule for removal design/removal action activities, including both start and completion time for the removal action, taking into account such factors as the length of the work season, enforcement options, the differing interests and abilities of the property owners, and available funding. Further, prompt risk reduction has been and continues to be applied to this response action, and EPA anticipates the initiation of cleanup activities during the 2011 construction season.

2.8 Comment Summary:

The extent of excavation of the St. Joe River bank as part of the removal action is unclear.

EPA Response:

The entire length of the containment wall installed in 2000, which is approximately 750 feet, will likely be removed as part of the removal action. A temporary gabion barrier would then be constructed so that containment wall can be removed and the bank reconstructed. The gabion barrier is envisioned to be a woven wire mesh basket lined or covered with impermeable material and filled with hard durable stone to create flexible, durable monolithic structures. The cost for this specific item is not included as a separate line item in the estimated costs because it is not significant with respect to the overall project costs.

2.9 Comment Summary:

The EE/CA should be revised to include more design assumptions.

EPA Response:

The level of design detail associated with the narrative discussion for each removal action alternative and the selected removal action is not intended to substitute for the level of effort needed during the design phase of the removal action. For example, environmental engineering concepts such as waste minimization, while not specifically mentioned, are expected to be addressed during design. In this instance, sorting and/or screening are viable techniques which could be incorporated into the design of the selected removal action to reduce the amount of contaminated materials shipped off-Site, thus potentially reducing costs and providing for a "greener" cleanup.

2.10 *Comment Summary:*

The EE/CA should be revised to include more cost assumptions.

EPA Response:

The cost estimates shown in the EE/CA are derived from a variety of sources including standard industry practices and production rates and best professional estimates and are prepared using data available from the EE/CA. Further, the accuracy of the cost estimates in the EE/CA are intended to provide a comparative cost analysis of the removal alternatives and are not intended to provide the level of cost detail associated with a final design.

2.11 *Comment Summary:*

Statements regarding the reinjection of untreated groundwater are misleading including the effect such discharge may have on the extent and distribution of contaminants.

EPA Response:

EPA disagrees with the supposition that statements regarding the reinjection of untreated groundwater are misleading. In this instance, there is no information available to suggest the oil/water separator operated on-Site from 1994 through 2000 was designed to accomplish anything other than to skim off the oil layer from the captured groundwater, as opposed to including biological, chemical, or physical treatment to remove solid- and dissolved-phased contaminants remaining in the groundwater. Further, while reinjection of the untreated groundwater addressed the disposition of the water, it may have also caused the oil and/or hazardous substances to migrate in the subsurface due to the hydraulic gradient caused by reinjection.

2.12 *Comment Summary:*

Institutional controls should be used more often to address many of the Site contaminant problems.

EPA Response:

The National Oil and Hazardous Substances Contingency Plan (NCP) emphasizes that Institutional Controls (ICs), such as water use and deed restrictions, are meant to supplement engineering controls as appropriate. The NCP does not allow the use of ICs as a substitute for active response measures as the sole cleanup action unless active response measures are determined to be impracticable. In this instance, there are several viable removal action alternatives and ICs will be used to supplement the physical component of the cleanup, where appropriate.

2.13 *Comment Summary:*

Assumptions about future land use at the Avery Landing Site should not include a human health residential exposure scenario because the Site was once an industrial property and ICs could prevent unacceptable human exposures to Site contamination.

EPA response:

EPA believes that the assumptions regarding future land use and the human health residential exposure scenario are accurate and appropriate for the Site. The sources and types of information reviewed by EPA in determining the reasonably anticipated future land use include, but are not limited to: current land use, zoning districts, Site location in relation to urban, residential, commercial, industrial, and recreational areas; ICs currently in-place; and proximity of the Site to critical habitats of endangered or threatened species.

In this instance, the Site was last used for railroad purposes during the mid-to late 1970s. During this time frame, there is anecdotal information suggesting there were cabins on-Site for railroad and/or Potlatch workers. Beginning sometime in the early 1980s after the railroad ceased operations, the Site has been used for seasonal and year-round residences. For example, as noted in the EE/CA, until 2009 there were several homes, motor homes, and motor home utility hook-ups found on the property owned by Potlatch. A domestic well is located on Section 16 for domestic use, and is not known to have been abandoned in accordance with State regulations. A vacation cottage is maintained on the adjoining private property.

The Site is located within an established Shoshone County Natural Resource District (NR). The purpose of the NR zoning district is to preserve and maintain the rural character of the land. Land uses in the area around the Site are largely rural and recreational, which is consistent with its location surrounded by National Forest System land. The St. Joe River is a popular recreational waterway that is often used for kayaking, rafting, and fishing. There are several areas of commercial land nearby, including a motel and recreational vehicle park across the river.

The U.S. Fish and Wildlife Service (USFWS) has determined that the following threatened species and critical habitat may occur in the vicinity of the Site and could potentially be affected by it: Canadian lynx (*Lynx canadensis*) and Bull trout (*Salvelinus confluentus*). Further, the USFWS has designated the St. Joe River as critical Bull trout habitat. Additionally, the segment of the St. Joe River adjacent to the Site has the following State designations: special resource water, domestic water supply, primary contact recreation, cold water communities, and salmonid spawning.